[Quick Start Guide]

INTELLIGENT STORAGE ROUTER INSTALLATION

QLOGIC

iSR6200

Purchasers of OEM products should consult with the OEM for support.

Please feel free to contact your QLogic approved reseller or QLogic Technical Support at any phase of integration for assistance. QLogic Technical Support can be reached by the following methods:

Web http://support.qlogic.com

E-mail support@qlogic.com

The QLogic knowledge database contains troubleshooting information for the QLogic adapters. Access the database from the QLogic Support Web page, http://support.qlogic.com. Use the Support Center search engine to look for specific troubleshooting information.

Quick Start Guide

The QLogic® iSR6200 Series of intelligent Storage Router (iSR) provides servers with iSCSI connectivity to SAN-attached Fibre Channel based disk or tape storage.

Suggested Configurations

Figure 1 shows the iSR6200 connecting iSCSI servers to a direct-attached storage array.

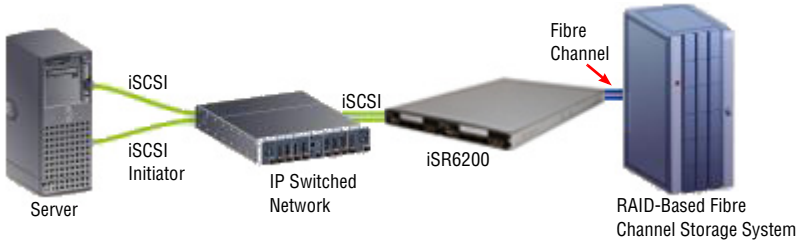

Figure 1. iSR6200 in Direct Attach Configuration

Figure 2 shows the iSR6200 connecting iSCSI servers to a SAN-attached array.

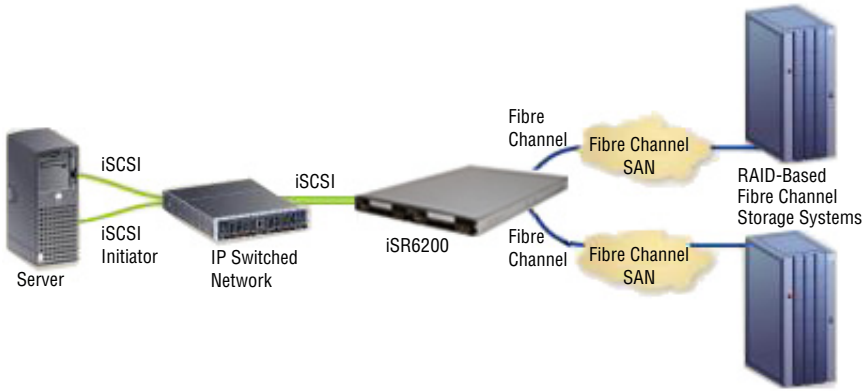

Figure 2. iSR6200 in SAN-Attach Configuration

Installation Instructions

This quick start guide provides procedures for installing and configuring your new QLogic iSR6200 router.

- Step 1. Verify the package contents.
- Step 2. Complete the pre-installation checklist.
- Step 3. Mount the router.
- Step 4. As needed, insert additional blade into router.
- Step 5. Install the small form factor pluggable (SFP) transceivers.
- Step 6. Apply power to the router.
- Step 7. Download and install SANsurfer® Router Manager
- Step 8. Configure the iSR6200 management port IP address.
- Step 9. Present LUNs to iSCSI initiators.
- Step 10. Configure second blade (if provided).
- Step 11. Configure iSR6200s for Connecting Remote SANs Using SmartWrite™.
- Step 12. Locate the blade serial number for the license key activation.

Step 1. Verify the Package Contents

Verify the contents of the purchased production package, either C12 or B10.

The iSR6200 router production package (C12) includes the following hardware components:

- iSR6200 router chassis with two blades installed
- DB9 to RJ45 cable adapter
- Power cable (6 foot black)
- Rail Mounting Kit, part number 50990-00
- *WEEE Conformance* card
- *Read Me First* card
- *China RoHs Electronic Info, RoHs Switch/Power/Fan SKUs Toxic Substance (Chinese Vers) 20 Years*
- *iSR6200 Quick Start Guide* (this document)

The standalone blade production package (B10) includes the following hardware components:

- One blade
- SFPs
- *WEEE Conformance* card
- *Read Me First* card
- *China RoHs Electronic Info, RoHs Switch/Power/Fan SKUs Toxic Substance (Chinese Vers) 20 Years*
- *iSR6200 Quick Start Guide* (this document)

Step 2. Complete the Pre-Installation Checklist

During the initial configuration process, the system prompts you to enter information for each blade contained in the iSR6200. Use the spaces provided in Table 1 and Table 2 to record the IP addresses for each blade.

Table 1. Worksheet for Router Blade 1 (left) Parameters

Symbolic name of the iSR6200 Blade 1	
Management port IP address, subnet mask, and gateway (if not using DHCP)	
iSCSI port 1 IP address, subnet mask, and gateway (GE-1)	
IP address of the Internet simple name service (iSNS) server for iSCSI port 1 (if iSNS will be enabled)	
iSCSI port 2 IP address, subnet mask, and gateway (GE-2)	
IP address of the iSNS server for iSCSI port 2 (if iSNS will be enabled)	
iSCSI port 3 IP address, subnet mask, and gateway for the optional (FC3, GE-3, or 10GE-3) port	
IP address of the iSNS server for iSCSI port 3 (if iSNS will be enabled)	
iSCSI port 4 IP address, subnet mask, and gateway for the optional (FC4, GE-4, or 10GE-4) port	
IP address of the iSNS server for iSCSI port 4 (if iSNS will be enabled)	

Table 2. Worksheet for Router Blade 2 (right) Parameters

Symbolic name of the iSR6200 Blade 2	
Management port IP address, subnet mask, and gateway (if not using DHCP)	
iSCSI port 1 IP address, subnet mask, and gateway (GE-1)	
IP address of the iSNS server for iSCSI port 1 (if iSNS will be enabled)	
iSCSI port 2 IP address, subnet mask, and gateway (GE-2)	
IP address of the iSNS server for iSCSI port 2 (if iSNS will be enabled)	

Table 2. Worksheet for Router Blade 2 (right) Parameters (Continued)

iSCSI port 3 IP address, subnet mask, and gateway for the optional (FC3, GE-3, or 10GE-3) port	
IP address of the iSNS server for iSCSI port 3 (if iSNS will be enabled)	
iSCSI port 4 IP address, subnet mask, and gateway for the optional (FC4, GE-4, or 10GE-4) port	
IP address of the iSNS server for iSCSI port 4 (if iSNS will be enabled)	

Step 3. Mount the Router

To mount the iSR6200 router in the rack, follow the instructions (*QLogic 6200 Storage Router Rack Mounting Guide*) provided in the rack mount kit.

Step 4. Insert Additional Blade into Router (As Needed)

If you have purchased an additional blade (B10), insert it into the iSR6200 router as follows:

1. Move the ejector latch handle to a position horizontal to the base.
2. Slide the blade into an open chassis slot.
3. When the blade is completely inserted, raise the ejector latch handle to snap the blade into place.

Step 5. Install the SFP Transceivers

An SFP transceiver is required for each router port that will be connected to a Fibre Channel device or switch. SFPs are included in the package. If you prefer to use SFP transceivers other than the ones provided, purchase one of the QLogic recommended transceivers listed in Table 3.

Table 3. Recommended Replacement Transceivers

8Gb Transceivers		10Gb Transceivers	
Manufacturer	**Part Number**	**Manufacturer**	**Part Number**
Finisar®	FTLF8528P2BCV-QL	Finisar	FTLX8571D3BCL
JDS Uniphase®	PLRXPL-VC-SH4-22-N-Q PLRXPL-VC-SH4-23-N-QL	JDS Uniphase	PLRXPL-SC-S43-22-N

To install an SFP transceiver, insert the transceiver into the router port, and then press gently until it snaps in place. The transceiver will fit only one way. If the transceiver does not install under gentle pressure, flip it over and try again.

Step 6. Apply Power to the Router

The iSR6200 router chassis contains one or two router blades, along with a power cooling module (PCM) for each blade. Each chassis blade provides light emitting diodes (LEDs) and connectors that face the front of the chassis. Each PCM provides a power connector, as well as an LED (see Figure 3).

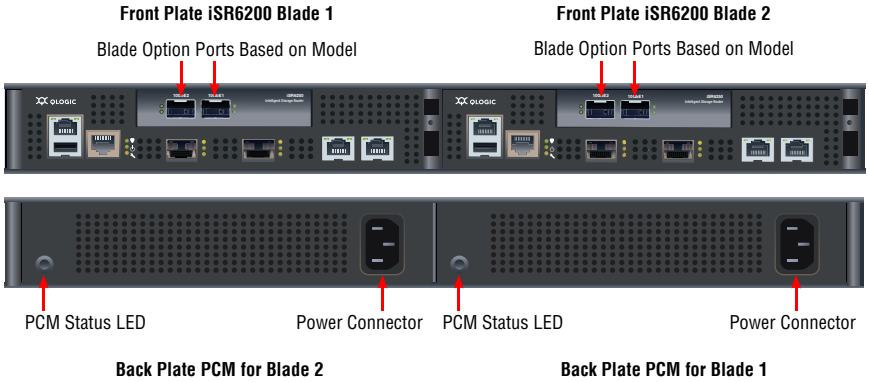
Front Plate iSR6200 Blade 1
Blade Option Ports Based on Model
Front Plate iSR6200 Blade 2
Blade Option Ports Based on Model
PCM Status LED
Power Connector
PCM Status LED
Power Connector
Back Plate PCM for Blade 2
Back Plate PCM for Blade 1

Figure 3. iSR6200 Router Chassis—Front and Back Plates

1. Attach the AC power cord to the power connector, located on the back of the PCM connected directly behind the router blade.
2. Connect the opposite end of the power cord to the wall outlet or power strip.
3. Check the PCM power LED to make sure the PCM is operational (green = power, yellow = no AC power).

   Figure 4 shows the location of the ports and LEDs on one of the blades contained within the iSR6200 unit.

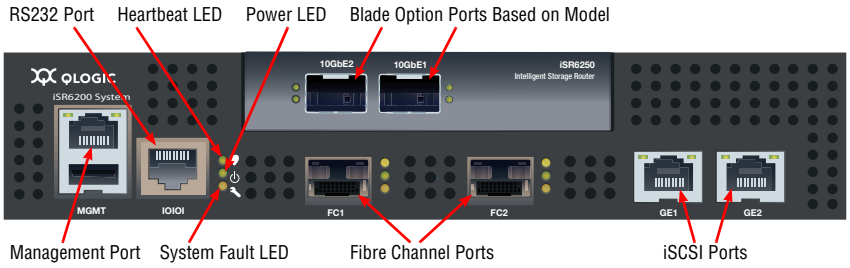

Figure 4. iSR6200 Blade Ports and LEDs

4. Verify that the router's input power LED is illuminated.

   The iSR6200 router runs its self test and begins normal operation—this may take a minute.
5. Verify that the heartbeat LED is blinking (once per second), and that the system fault LED is *not* illuminated.

The iSR6240 router blade (see Figure 5) adds two iSCSI Ethernet ports to the blade configuration. Each port has the following capacity:

- ❑ Auto negotiating transmission rates of 100 and 1000Mbps
- ❑ Full duplex transmission mode
- ❑ Support for jumbo frames (at 1000Mbps only)
- ❑ RJ45 copper Ethernet connector type
- ❑ iSCSI header and data digest in the hardware
- ❑ IPv4 and IPv6 protocol support
- ❑ iSCSI offload

Figure 5. iSCSI (GE) Ports on the iSR6240 Router Blade

The iSR6250 router blade (see Figure 6) adds two 10Gb Ethernet ports to the blade configuration. Each port has the following capacity:

- ❑ 10GbE iSCSI ports that run in full duplex mode
- ❑ Support for jumbo frames
- ❑ IPv4 and IPv6 protocol support
- ❑ iSCSI header and data digest in the software

Figure 6. 10Gb Ethernet Ports on the iSR6250 Router Blade

The iSR6260 router blade (see Figure 7) adds two more Fibre Channel ports to the blade configuration. Each port has the following capacity:

- ❑ Auto negotiating transmission rates of 2, 4, or 8Gb
- ❑ Hot pluggable SFP Fibre Channel connector
- ❑ N_Port, NL_Port, or transparent port type

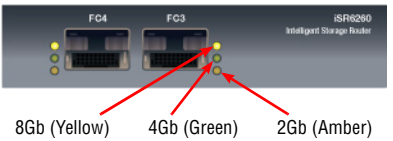

Figure 7. Fibre Channel Ports on the iSR6260 Router Blade

For installation details, diagnostics, and troubleshooting, see the *iSR6200 QLogic intelligent Storage Router (iSR) Installation Guide.*

Step 7. Download and Install SANsurfer Router Manager

Follow these steps to download the SANsurfer Router Manager tool from the QLogic Web site and install it on a workstation:

1. Close all programs currently running.
2. Go to the QLogic **Downloads and Documentation** page located here:
   http://driverdownloads.qlogic.com/
3. Under **QLogic Products**, type `iSR6200` in the search box.
   (Alternatively, you can click the **Guided Search** link to obtain assistance in locating the utility to download.)
4. In the **Resource Name** column, click the SANsurfer Router Manager version for your operating system.
5. Click **Download Now**.
6. Save the file to your computer.
7. Run the installer. (If your Internet browser displays a security warning, you can safely bypass it.)
8. Follow the prompts in the SANsurfer Router Manager installation wizard.

Step 8. Configure the iSR6200 Management Port IP Address

1. Using a switch or hub, connect the router's management port (10/100 Ethernet) to your workstation.
   As an alternative, you may directly connect your workstation to the router using an Ethernet crossover cable.
   The iSR6200 management port's default IP address is 10.0.0.1, subnet 255.0.0.0. Make sure the workstation connected to the iSR6200 router has Ethernet address 10.0.0.*x*, where *x* is other than 1 and subnet mask is 255.0.0.0.
2. From the workstation, open a command window and using a Telnet session, follow these steps:
   a. Connect to the iSR6200 using IP address `10.0.0.1`.
   b. Log in as `guest`, and use the password `password`.
   The following shows the iSR6200 command line interface (CLI) window.

```
iSR6200 login: guest
Password:

       ******************************************************
       *                                                    *
       *                      ISR6200                       *
       *                                                    *
       ******************************************************

iSR6200 #> blade 1
iSR6200 <1> #> admin start -p config

iSR6200 <1> (admin) #> set mgmt

  A list of attributes with formatting and current values will follow.
  Enter a new value or simply press the ENTER key to accept the current value.
  If you wish to terminate this process before reaching the end of the list
  press 'q' or 'Q' and the ENTER key to do so.
```

```
  WARNING:
  The following command might cause a loss of connections to the MGMT port.

  IPv4 Interface (0=Enable, 1=Disable)             [Enabled          ]
  IPv4 Mode (0=Static, 1=DHCP, 2=Bootp, 3=Rarp)    [Dhcp             ] 0
  IPv4 Address                                     [10.0.0.1         ] 172.17.136.55
  IPv4 Subnet Mask                                 [255.0.0.0        ] 255.255.254.0
  IPv4 Gateway                                     [0.0.0.0          ] 172.17.136.1
  IPv6 Interface (0=Enable, 1=Disable)             [Disabled         ]

  All attribute values that have been changed will now be saved.

Connect to host lost.
```

3. Select the blade you want to configure by entering one of the following CLI commands:

   `blade 1`
   `blade 2`

4. At the prompt, enter the following CLI commands (for blade 2):

   `iSR6200 (admin)#>` **`admin start`** (the default password is `config`)
   `iSR6200 (admin)#>` **`set mgmt`**

5. Specify the mode. QLogic recommends using a static address. Select option **0**, and then enter the IP address, subnet mask, and gateway, if applicable.

   You will lose the connectivity of the Telnet session at this time.

6. If you want to continue using the CLI, restart the Telnet session with the IP address you just assigned to the management port.

   You now have the management port configured with the appropriate IP address.

7. Connect the management port cable to your Ethernet network. Connect cables to the iSCSI and Fibre Channel ports (GE1, FC1, and FC2, as well as the blade option ports based on model), as shown in the configuration diagrams (Figure 1 and Figure 2).

8. If necessary, repeat these procedures to configure your second blade.

Step 9. Present LUNs to iSCSI Initiators

1. If the iSR6200 is connected in the Fibre Channel fabric, make sure the Fibre Channel fabric zoning is set so that Fibre Channel storage array ports and router Fibre Channel ports are in the same zone.
2. Using storage array management software, create all LUNs that you want to present to all iSCSI initiators through this iSR6200. Present the LUNs from the Fibre Channel storage array to the iSR6200 using the WWPNs of this iSR6200. If you are setting up a high availability (HA) configuration that uses two iSR6200s as a pair, present the LUNs to both iSR6200s using Fibre Channel WWPNs of both iSR6200s.
3. Create the iSCSI initiator list in iSR6200 using one of the following methods:
   - ❑ Enter the iSCSI initiator name using the SANsurfer Router Manager's Add Initiator Wizard. The system prompts you to enter the iSCSI name of an initiator.

❑ From the server with iSCSI initiators, run a discovery session for the iSCSI port IP address of the iSR6200. This automatically registers the iSCSI initiator names with the iSR6200. Running the iSCSI discovery session on different OS environments may vary. The following example illustrates how to run an iSCSI discovery session on a Windows Server.

To run a discovery session on Windows Server:

a. Install an iSCSI initiator on your server. This can be either a dedicated iSCSI adapter or a software initiator for Windows like the one available from www.microsoft.com.

b. Invoke the software initiator, and then specify the IP address of the iSCSI port on your iSR6200.

c. On the iSCSI Initiator Properties dialog box, click the **Targets** tab.

d. On the Targets page (see Figure 8), select a target and then click **Log On**.

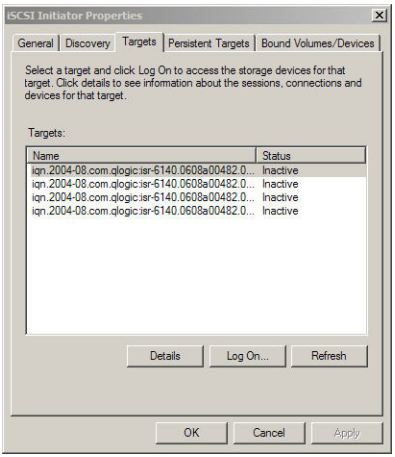

Figure 8. iSCSI Initiator Properties

4. Present LUNs to the iSCSI initiator as follows:

a. To refresh the SANsurfer Router Manager display, click **Refresh**.

The iSCSI initiator name should appear on the Information page for the selected Discovered iSCSI Initiators (see Figure 9).

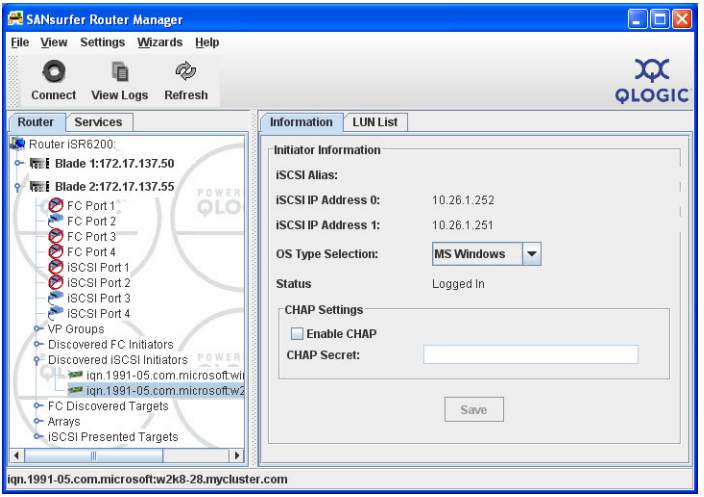

Figure 9. Discovered iSCSI Initiators Information

To assign a LUN to a server, run the Target Presentation/LUN Mapping Wizard. This wizard allows you to map a LUN to the iSCSI initiator on your server.

b. On the **Wizards** menu, click **LUN Presentation Wizard**.

c. On the Target Selection window, click the box next to the LUNs you want to map, and then click **Next**.

d. On the Select the Initiators for the LUN Presentation window (Figure 10), select the initiators for the LUN presentation, and then click **Next**.

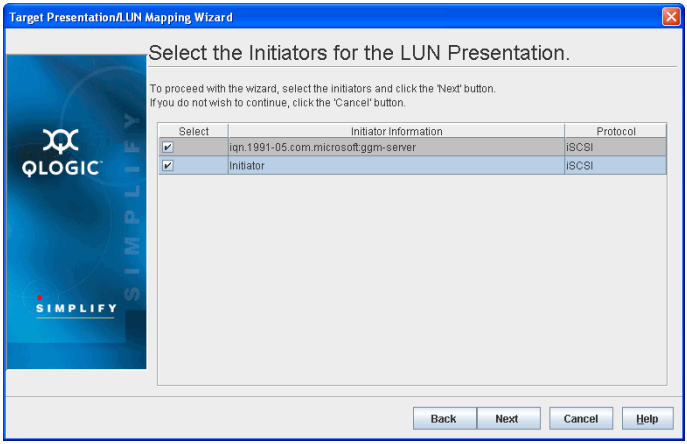

Figure 10. Target Presentation/LUN Mapping Wizard

e. To save your mappings, click **Save**, and then enter your management password.

f. To refresh the SANsurfer Router Manager display, click **Refresh**.

Now, when you select your iSCSI initiator in the left pane of the SANsurfer Router Manager window, you should be able to see the LUNs mapped to that initiator on the LUN List page, as shown in Figure 11.

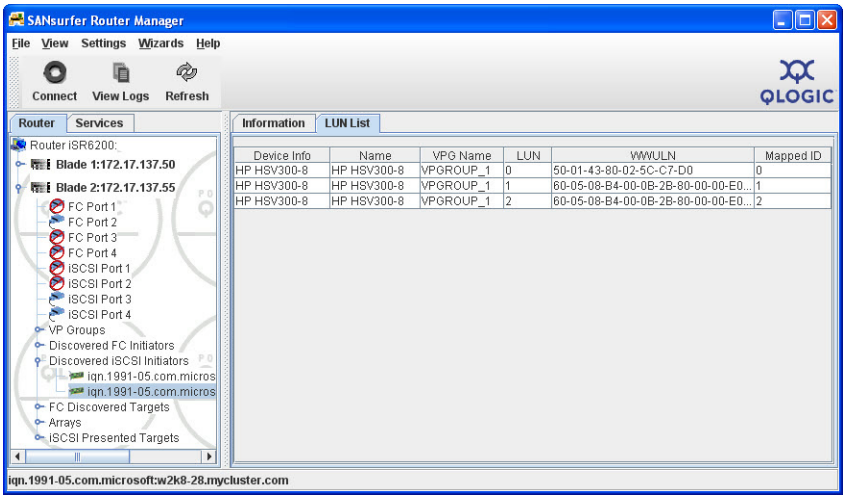

Figure 11. LUN List Page

g. To log on to this target, return to the Windows Server window, and then click **LogOn**.

The status should change from `Inactive` to `Connected`.

Step 10. Configure Second Blade (if provided)

To configure a second blade (if provided), repeat Step 9. Use Table 2 on page 5 to build the blade option configuration.

Step 11. Configure iSR6200s for Connecting Remote SANs Using SmartWrite

Configuration requirement:

- At least one Fibre Channel port of the iSR6200 must be connected to a Fibre Channel SAN.
- QLogic recommends that you use Fibre Channel WWPN-based zoning. Add each iSR6200 Router's Fibre Channel WWPN to all zones in the Fibre Channel switch to which it is connected. The Fibre Channel switch zoning changes allow the iSR6200 Router to discover all devices in that Fibre Channel zone.

Additional requirement for remote SAN island connectivity:

- The GbE port IP addresses of both local and remote routers must be set so that the routers are accessible to each other.
- The management port IP address of both local and remote routers must be set so that the routers are accessible to each other.
- QLogic recommends that you have installed the SmartWrite™ feature (license) on each router.

Associate remote iSR6200 to local iSR6200:

Using the GUI:

1. Start Router Manager and connect to a local iSR6200 using the management port IP address.
2. On the **Wizards** menu, click **Add Remote Router Wizard**.
3. Type the remote router management port IP address, and then click **Next**.
4. In the password dialog box, type the local router and remote router passwords (the default password for both is `config`).

   The Status information window shows the status of this operation.

Using the CLI:

1. To associate the local and remote routers, issue the `remotepeer add` command.
2. To view the list of remote routers, issue the `show remotepeer` command.

   For additional information, see the *iSR6200 Command Line Interface (CLI) User's Guide*.

Import Fibre Channel devices from remote SAN to local SAN:

Using the GUI:

1. Run the Map Remote Initiator/Target Wizard to establish connection between local and remote devices.
2. Select the device to be mapped by expanding the router tree.
3. Click **Next** to select the other device for this mapping.

   If SmartWrite licenses are enabled, the window shows the SmartWrite features.
4. Enable SmartWrite.

5. If round-trip latencies are greater than 50 ms or WAN line rate is DS-3 (4500Mbps) or less, enable compression.
6. Except for mapping of tape devices, select **Load Balancing**.
7. Confirm the summary of this change.
8. Enter the local router's password.

   The status screen shows the status of this operation.

Using the CLI:

- Issue the `remotemap add` command.

Step 12. Locate the Blade Serial Number for the License Key Activation

The serial number of each blade is required for activating the router license key on the License Key Activation form. You can locate the blade serial number (SN) with the following methods:

- Use the QLogic utilities, either the CLI or SANsurfer Router Manager (GUI). (Recommended method; most reliable)
- View the serial number marked on the bottom of blade.

Serial Number Formats

It is very important that you enter the blade's exact and entire serial number (case-sensitive). If any part of the serial number is different or truncated, the generated license key will not work. The QLogic iSR6200 products have 10-digit alphanumeric serial numbers, for example:

SN: 0951F00579

Using the CLI to Locate the Serial Number

To find the serial number of your blade from the command line, follow these steps:

1. Telnet into the iSR6200, and then start the CLI.
2. Log in as `guest`; the default password is *password*.
3. Issue the **`show chassis`** command.
4. Under `Blade x Information`, locate and write down the serial number for each blade.

   In the following example, the two blade serial numbers are shown in bold blue text:

```
iSR6200 login: guest
Password:

       ******************************************************
       *                                                    *
       *                       ISR6200                      *
       *                                                    *
       ******************************************************

iSR6200 #> show chassis

  Chassis Information
  ---------------------
  Product Name                  iSR6200
```

```
  Chassis Name
  Serial Number                 0951F00579
  HW Version                    31896-02  B
  Fan Speed                     Normal

  Blade 1 Information (Left Slot)
  -------------------------------
  Status                        Online
  Product Name                  iSR6200
  Symbolic Name                 Blade-1
  Serial Number                 0952F00032
  HW Version                    31895-03  A
  SW Version                    3.1.0.2
  Temp (Front/Rear/CPU1/CPU2)   40C/28C/35C/33C

  Power Cooling Module 1
  ----------------------
  Status                        Installed
  Power Source                  Connected
  Fan1/Fan2/Fan3                Healthy/Healthy/Healthy

  Blade 2 Information (Right Slot)
  --------------------------------
  Status                        Online
  Product Name                  iSR6200
  Symbolic Name                 Blade-2
  Serial Number                 0952F00019
  HW Version                    31895-03  A
  SW Version                    3.2.0.0rc6b2
  Temp (Front/Rear/CPU1/CPU2)   35C/25C/31C/33C

  Power Cooling Module 2
  ----------------------
  Status                        Installed
  Power Source                  Not Connected
  Fan1/Fan2/Fan3                Healthy/Healthy/Healthy
iSR6200 #>
```

Using the GUI to Locate the Serial Number

The following shows how to locate the serial number using the SANsurfer Router Manager utility provided by QLogic. Refer to the *iSR6200 Router Manager User's Guide* for specific information regarding the management utility.

To find the serial number of your blade from SANsurfer Router Manager, follow these steps:

1. In the SANsurfer Router Manager's left pane, click the **Router** tab.
2. In the left pane's router tree, click **Blade 1**.
3. In the right pane on the Information page, locate and write down the **Serial Number** shown under Basic Information (see Figure 12).
4. Repeat the preceding steps to determine the **Blade 2** serial number.

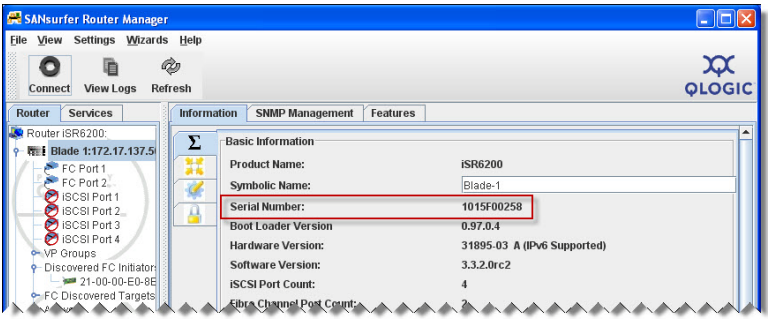

Figure 12. Locating the Blade Serial Number in the GUI

Finding the Serial Number on the Physical Blade

The iSR6200 products have the serial number printed on the bottom of the blade. For a detailed procedure for removing the blade, refer to the *iSR6200 QLogic intelligent Storage Router (iSR) Installation Guide*, "Removal and Replacement" chapter. You can view the installation guide online at QLogic.com on the **Downloads and Documentation** page for your model number.

Figure 13 shows the labeling on a QLogic iSR6200 Series blade:

QLOGIC®
Model: 6200-B10
This Device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation. This class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB 003 du Canada.
この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。
VCCI－A
QLG-6200-B10 (A)
N1604
Label ID 12784-00 REV A
MODEL: 6250-B10-N-CK-X C
PN: 31895-03 A
SN: 0952F00019
Product of Malaysia (includes foreign content)

Figure 13. Locating the Blade Serial Number on the Physical Blade

Congratulations! You have now successfully installed your QLogic iSR6200, mapped target LUNs to an iSCSI initiator on your server, and determined the blade serial number. Your server should see the Fibre Channel LUNs through the server's volume manager.

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